

PATENT COOPERATION TREATY



From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

OKABE, Masao
No. 602, Fuji Bldg.
2-3, Marunouchi 3-chome
Chiyoda-ku, Tokyo 100-0005
JAPAN

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing (day/month/year) 23/11/2004	
Applicant's or agent's file reference CFO18213WO	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/JP2004/009273	International filing date (day/month/year) 24/06/2004
Applicant CANON KABUSHIKI KAISHA	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
 - ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Laurent Tissot

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference CFO18213WO	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/JP2004/009273	International filing date (day/month/year) 24/06/2004	(Earliest) Priority Date (day/month/year) 25/06/2003
Applicant CANON KABUSHIKI KAISHA		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2004/009273

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10

Block copolymer, composition comprising the polymer, ink
comprising the polymer and method to apply the composition

2. claim: 11

Liquid application apparatus

3. claim: 12

Head Kit

INTERNATIONAL SEARCH REPORT

International Application No
PC 2004/009273A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C08F297/00 C09D153/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C08F C09D B41J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 556 649 A (DU PONT) 25 August 1993 (1993-08-25) claims 1,23,24,28; examples prep,2-7	1-3,6-10
P,X	WO 2004/005362 A (TSUBAKI KEIICHIRO ; NAKAZAWA IKUO (JP); SATO KOICHI (JP); CANON KK (JP) 15 January 2004 (2004-01-15) claims; figure 1; examples 1,2	1,3,5-10
P,X	EP 1 371 696 A (CANON KK) 17 December 2003 (2003-12-17) claims; examples 1,7	1,3,5-10
E	WO 2004/063240 A (SATO KOICHI ; CANON KK (JP); EGUCHI KEN (JP); MARUYAMA TOMOKO (JP)) 29 July 2004 (2004-07-29) page 26 - page 27; claims	1,3,5-10

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

12 November 2004

Date of mailing of the international search report

23.11.04

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Wirth, M

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/009273

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 670 222 A (CANON KK) 6 September 1995 (1995-09-06) claims 1,7; figures 19,17,18 -----	11,12
X	EP 0 819 538 A (CANON KK) 21 January 1998 (1998-01-21) claims 50,62; figure 37 -----	11,12
X	EP 1 243 624 A (CANON KK) 25 September 2002 (2002-09-25) paragraphs '0112!, '0120!, '0132! - '0139!; figure 1 -----	11,12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC 2004/009273

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0556649	A	25-08-1993	DE 69325401 D1 DE 69325401 T2 EP 0556649 A1 JP 2675956 B2 JP 7053841 A US 5519085 A	29-07-1999 25-11-1999 25-08-1993 12-11-1997 28-02-1995 21-05-1996
WO 2004005362	A	15-01-2004	WO 2004005362 A2	15-01-2004
EP 1371696	A	17-12-2003	JP 2004035735 A JP 2004067999 A EP 1371696 A1 US 2003232904 A1	05-02-2004 04-03-2004 17-12-2003 18-12-2003
WO 2004063240	A	29-07-2004	JP 2004217705 A WO 2004063240 A1	05-08-2004 29-07-2004
EP 0670222	A	06-09-1995	JP 3255788 B2 JP 7241991 A JP 3471887 B2 JP 7266566 A JP 3126590 B2 JP 7309012 A AT 185744 T CA 2143896 A1 CN 1110945 A , B DE 69512810 D1 DE 69512810 T2 EP 0670222 A2 JP 7290711 A KR 190416 B1 SG 44309 A1 US 5933163 A	12-02-2002 19-09-1995 02-12-2003 17-10-1995 22-01-2001 28-11-1995 15-11-1999 05-09-1995 01-11-1995 25-11-1999 20-04-2000 06-09-1995 07-11-1995 01-06-1999 19-12-1997 03-08-1999
EP 0819538	A	21-01-1998	JP 3372765 B2 JP 10024580 A AU 2860597 A CA 2210377 A1 CN 1172733 A , B DE 69729691 D1 EP 0819538 A2 US 6183068 B1	04-02-2003 27-01-1998 22-01-1998 12-01-1998 11-02-1998 05-08-2004 21-01-1998 06-02-2001
EP 1243624	A	25-09-2002	JP 2003089752 A EP 1243624 A1 US 2002186288 A1	28-03-2003 25-09-2002 12-12-2002

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2004/009273

International filing date (day/month/year)
24.06.2004

Priority date (day/month/year)
25.06.2003

International Patent Classification (IPC) or both national classification and IPC
C08F297.00. C09D153/00

Applicant:
CANON KABUSHIKI KAISHA

1 This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Wirth, M

Telephone No. +49 89 2399-8595



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/009273

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/009273

Box No. II Priority

1. ☒ The following document has not been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
 - ☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☒ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/009273

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-12
Inventive step (IS)	Yes: Claims	
	No: Claims	1-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

and /or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

see form 210

Re Item IV.

The separate inventions are:

Claims 1-10

Block copolymer, composition comprising the polymer, ink comprising the polymer and method to apply the composition

Claim 11

Liquid application apparatus

Claim 12

Head Kit

They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

The "special technical feature" in the sense of Rule 13.2 PCT of claim 1 is the specific composition of the block copolymer which is capable of satisfactorily dispersing a functional substance in a solvent.

Neither this feature nor any corresponding feature is comprised in the apparatus of claim 11. This apparatus is suitable for applying the composition of claim 7 but does not comprise any feature directly linked to the specific composition of the block polymer. Reference is made to the International Search and Preliminary Examination Guidelines 10.14, p 78.

The same applies to the head kit of claim 12 which does not even refer to the composition of claim 7.

Re Item V.

1 The following documents are referred to in this communication:

D1: EP-A-0 556 649 (DU PONT) 25 August 1993 (1993-08-25)

D2: WO 2004/005362 A (TSUBAKI KEIICHIRO ; NAKAZAWA IKUO (JP); SATO KOICHI (JP); CANON KK (JP) 15 January 2004 (2004-01-15)

D3: EP-A-1 371 696 (CANON KK) 17 December 2003 (2003-12-17)

D4: WO 2004/063240 A (SATO KOICHI ; CANON KK (JP); EGUCHI KEN (JP);

MARUYAMA TOMOKO (JP)) 29 July 2004 (2004-07-29)

D5: EP-A-0 670 222 (CANON KK) 6 September 1995 (1995-09-06)

D6: EP-A-0 819 538 (CANON KK) 21 January 1998 (1998-01-21)

D7: EP-A-1 243 624 (CANON KK) 25 September 2002 (2002-09-25)

2. The hydration temperature is not a parameter usually used in the state of the art to define block copolymers. If a piece of state of the art fulfills all the other features of claim 1, this feature will also be considered fulfilled unless the applicant proves the contrary or gives convincing arguments.
3. D1 (see passages cited in the search report) discloses a triblock polymer comprising a triethylene glycol chain and comprising a first block having hydrophobicity (phenyl ethyl methacrylate), a block having ionic property (methacrylic acid) and a dimethylaminoethyl methacrylate/ethoxy triethylene glycol methacrylate block. The hydration temperature of this last block is not specified. However, for the reasons stated above, claim 1 is not considered novel. Should novelty be established, inventive step is also questionable since it is not clear what the contribution of this feature is for the solution of the technical problem stated on page 3. Indeed, comparative examples in which the hydration temperature is under 70 °C seem also to lead to stable dispersions. The dependant claims do not seem to contain any feature which, in combination with claim 1, would render the claimed subject-matter novel/inventive.
4. The application apparatus and the head kit claimed in claims 11 and 12 are standard in the field of ink jet printers as shown in documents D5-D7 (see passages cited in the search report). It is also noted that the printer used in the examples (Canon BJJ800) also anticipates these claims.

Re Item VI

D2-D4 are intermediate documents in which MOVE is used in the second block.